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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,040	06/20/2001	Hong Cui	Cui 1-27	2712

7590 04/27/2004

MANELLI DENISON & SELTER PLLC
7th Floor
2000 M Street, N.W.
Washington, DC 20036-3307

EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/884,040

Applicant(s)

CUI ET AL.

Examiner

TUAN A PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-10,12-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 2-4, 11, and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattisson et al. (U.S. Patent No. 6,577,212, hereinafter, "Mattisson") in view of Ninh (U.S. Patent No. 6,212,274).

Regarding claim 1, Mattisson teaches a digital gyrator (see figure 1, col.2, ln.15-200, comprising:

a digital filter to emulate an inductance on a telephone line serviced by the digital filter, the digital filter being initially settable to a first cutoff frequency (see col.1, ln.14-22, col.3, ln.30-60, i.e., high frequency).

It should be noticed that Mattisson fails to clearly teach an oscillation checker module to detect amplitude of oscillation on the telephone line serviced by the digital filter, the oscillation checker module adapted to reset the digital filter to a second cutoff frequency lower than the first cutoff frequency as a function of the detected oscillation level. However, Ninh teaches such features (see col.13, ln.44-54, col.21, ln.53-67, col.22, ln.8-20) for a purpose of detecting the cutoff frequency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of an oscillation checker module to detect an amplitude of oscillation on the telephone line serviced by the digital filter, the oscillation checker module adapted to reset the digital filter to a second cutoff frequency lower than the first cutoff frequency as a function of the detected oscillation level, as taught by Ninh, into view of Mattisson in order to control the DC current level on the telephone line.

Regarding claim 7, Ninh further teaches the digital gyrator wherein the second cutoff frequency relates to a desired convergence rate after said telephone line is in a steady state (see col.13, ln.45-54).

Regarding claim 8, Ninh further teaches the digital gyrator further comprising: a digital load line correlation table to correlate values output from the digital filter into a desired voltage level (see col.15, ln.38-57).

Regarding claim 9, Ninh further teaches the digital gyrator further comprising: a codec to convert an output from said digital load line correlation table into a voltage signal for output to a DAA servicing said telephone line (see col.3, ln.45-50).

3. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Remson (U.S. Patent No. 5,144,287) in view of Ninh (U.S. Patent No. 6,212,274).

Regarding claims 10 and 15, Remson teaches a method and apparatus of regulating a signal on a telephone line, comprising:

digitizing a signal received from the telephone line (see col.4, ln.29-39), and detecting amplitude of oscillation in the signal at the telephone line (see col.6, ln.20-37).

It should be noticed that Remson fails to clearly teach filtering the digitized signal with a digital low pass filter having a first cutoff frequency, and adjusting the digital low pass filter to have a second cutoff frequency lower than the first cutoff frequency to dampen the detected oscillation if an amplitude of the oscillation indicates an unstable pre-charge state of the telephone line. However, Ninh teaches such features (see col.13, ln.44-54, col.21, ln.53-67, col.22, ln.8-20) for a purpose of detecting the cutoff frequency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of filtering the digitized signal with a digital low pass filter having a first cutoff frequency, and adjusting the digital low pass filter to have a second cutoff frequency lower than the first cutoff frequency to dampen

the detected oscillation if an amplitude of the oscillation indicates an unstable pre-charge state of the telephone line, as taught by Ninh, into view of Remson in order to control the DC current level on the telephone line.

4. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattisson et al. (U.S. Patent No. 6,577,212, hereinafter, "Mattisson") in view of Ninh (U.S. Patent No. 6,212,274) as applied to claim 1 above, and further in view of Goldfarb et al. (U.S. Patent No. 6,335,656, hereinafter, "Goldfarb").

Regarding claim 5, Mattisson and Ninh, in combination, fails to clearly teach the digital gyrator wherein the first cutoff frequency relates to a desired convergence rate when the telephone line is in a pre-charge state. However, Goldfarb teaches such features (see col.4, ln.1-23) for a purpose of detecting the cutoff frequency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the digital gyrator wherein the first cutoff frequency relates to a desired convergence rate when the telephone line is in a pre-charge state, as taught by Goldfarb, into view of Mattisson and Ninh in order to block DC signal on telephone line.

Regarding claim 6, Goldfarb further teaches the digital gyrator wherein the second cutoff frequency relates to a desired convergence rate after the telephone line is in a steady state (see col.4, ln.1-23).

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5. Claims 12-14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Remson (U.S. Patent No. 5,144,287) in view of Ninh (U.S. Patent No. 6,212,274) as applied to claims 10 and 15 above, and further in view of Schulz (U.S. Patent No. 5,880,538).

Regarding claims 12 and 17, Remson and Ninh, in combination, fails to clearly teach the method and apparatus of regulating a signal on the telephone line wherein the first cutoff frequency is approximately 1 Hz. However, Schulz teaches such features (see col.4, ln.15-25) for a purpose of selecting the particular frequency range.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the method of regulating a signal on the telephone line wherein the first cutoff frequency is approximately 1 Hz, as taught by Schulz, into view of Remson and Ninh in order to improve the noise signals in telephone system.

Regarding claims 13 and 18, Schulz further teaches the method and apparatus of regulating a signal on the telephone line wherein the second cutoff frequency is approximately 0.1 Hz (see col.4, ln.15-25).

Regarding claim 14 and 19, Schulz further teaches the method and apparatus of regulating a signal on the telephone line wherein the second cutoff frequency is approximately 0.1 Hz (see col.4, ln.15-25).

Allowable Subject Matter

6. Claims 2-4, 11, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Dahan et al. (U.S. Patent No. 6,611,580), Chaplik et al. (U.S. Patent No. 6,693,916), Brown (U.S. Patent No. 6,194,972), and Parrott (U.S. Patent No. 6,618,482) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method for protecting devices connected to a telephone line and digital gyrator with loop amplifiers connected to inductive elements.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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April 24, 2004

Examiner

Tuan Pham


CURTIS KONTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600